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**REPORT**

**ANALYSIS OF THE ELECTRICITY AND COAL MARKET OF KAZAKHSTAN**

**JANUARY-JULY 2021**

**DEPARTMENT "MARKET DEVELOPMENT"**

**August, 2021**

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# **SECTION I**

# **Electricity generation in the UES of Kazakhstan**

According to the System Operator, power plants of the Republic of Kazakhstan in January-July 2021 generated 66,266.8 million kWh of electricity, which is 7.8% more than the same period in 2020. The growth in generation was observed in all zones of the UPS of Kazakhstan.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Zone** | **Generation type** | **January-July** | | **Δ, %**  **2020** |
| **2020** | **2021** |
| **Kazakhstan** | **Total** | **61472.9** | **66266.8** | **7.8%** |
| *TPP* | *48765.2* | *52582.8* | *7.8%* |
| *GTES* | *5606.2* | *6130.5* | *9.4%* |
| *hydroelectric power station* | *5788.1* | *5594.0* | *-3.4%* |
| *WES* | *562.2* | *936.7* | *66.6%* |
| *SES* | *748.6* | *1020.9* | *36.4%* |
| *BSU* | *2.6* | *1.9* | *-26.9%* |
| **Northern** | **Total** | **46717.6** | **50746.5** | **8.6%** |
| *TPP* | *40383.5* | *44381.6* | *9.9%* |
| *GTES* | *1919.6* | *1750.9* | *-8.8%* |
| *hydroelectric power station* | *3875.1* | *3835.8* | *-1.0%* |
| *WES* | *260.7* | *435.7* | *67.1%* |
| *SES* | *276.1* | *340.6* | *23.4%* |
| *BSU* | *2.6* | *1.9* | *-26.9%* |
| **South** | **Total** | **6781.9** | **7216.7** | **6.4%** |
| *TPP* | *4154.4* | *4296.6* | *3.4%* |
| *GTES* | *109.3* | *164.4* | *50.4%* |
| *hydroelectric power station* | *1913.0* | *1758.2* | *-8.1%* |
| *WES* | *134.6* | *319.2* | *137.1%* |
| *SES* | *470.6* | *678.3* | *44.1%* |
| **Western** | **Total** | **7973.4** | **8303.6** | **4.1%** |
| *TPP* | *4227.3* | *3904.6* | *-7.6%* |
| *GTES* | *3577.3* | *4215.2* | *17.8%* |
| *WES* | *166.9* | *181.8* | *8.9%* |
| *SES* | *1.9* | *2.0* | *5.3%* |

# 

# *Electricity generation by regions of the Republic of Kazakhstan*

In January-July 2021, compared to the same period in 2020, electricity generation increased significantly (an increase of 15% or more) in the Zhambyl, Kyzylorda, Pavlodar and Turkestan regions. At the same time, a decrease in electricity generation was observed in Aktobe, Almaty, East Kazakhstan, Karaganda, Kostanay, Mangystau, North Kazakhstan regions.

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January-July** | | **Δ, %** |
| **2020** | **2021** |
| 1 | Akmola | 2671.0 | 3,064.4 | 14.7% |
| 2 | Aktobe | 2346.3 | 2202.1 | -6.1% |
| 3 | Almaty | 4238.1 | 4,147.8 | -2.1% |
| 4 | Atyrau | 3620.0 | 4,086.6 | 12.9% |
| 5 | East Kazakhstan | 5,523.3 | 5392.3 | -2.4% |
| 6 | Zhambyl | 1321.1 | 1,595.6 | 20.8% |
| 7 | West Kazakhstan | 1340.2 | 1390.1 | 3.7% |
| 8 | Karaganda | 9679.9 | 9 105.2 | -5.9% |
| 9 | Kostanay | 675.1 | 628.1 | -7.0% |
| 10 | Kyzylorda | 306.8 | 383.5 | 25.0% |
| 11 | Mangistau | 3013.2 | 2826.9 | -6.2% |
| 12 | Pavlodar | 23,901.8 | 28 640.0 | 19.8% |
| 13 | North Kazakhstan | 1920.2 | 1,714.4 | -10.7% |
| 14 | Turkestan | 915.9 | 1,089.8 | 19.0% |
|  | **Total for Kazakhstan** | **61,472.9** | **66,266.8** | **7.8%** |

The volume of electricity production by energy producing organizations of Samruk-Energy JSC for January-July 2021 amounted to 20,863.7million kWh or an increase of 27.4% compared to the same period in 2020.

*million kWh*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Δ 2021/2020** | |
| **January-July** | **share in Kazakhstan, %** | **January-July** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **JSC "Samruk-Energy"** | **16,382.6** | **26.7%** | **20,863.7** | **31.5%** | **4481.1** | **27.4%** |
| *1* | *JSC AlES* | *3,153.8* | *5.1%* | 3005.9 | *4.5%* | *-147.9* | *-4.7%* |
| *2* | *LLP "Ekibastuz GRES-1"* | *9,819.2* | *16.0%* | 12520.4 | *18.9%* | *2701.2* | *27.5%* |
| *3* | *JSC "Ekibastuz GRES-2"* | *2396.2* | *3.9%* | 4382.1 | *6.6%* | *1985.9* | *82.9%* |
| *4* | *JSC "Shardara HPP"* | *382.1* | *0.6%* | 368.2 | *0.6%* | *-13.9* | *-3.6%* |
| *5* | *JSC "Moinak HPP"* | *536.2* | *0.9%* | 494.4 | *0.7%* | *-41.8* | *-7.8%* |
| *6* | *Samruk-Green Energy LLP* | *2.4* | *0.004%* | 11.8 | *0.018%* | *9.40* | *391.7%* |
| *7* | *LLP "First wind power plant"* | *92.7* | *0.2%* | 80.9 | *0.1%* | *-11.8* | *-12.7%* |

# **Electricity consumption in the UES of Kazakhstan**

# *Consumption of electrical energy by zones and regions*

According to the System Operator, in January-July 2021, there was an increase in the dynamics of electricity consumption in the republic compared to January-July 2020 by 7%. So, in the northern zone of the republic, consumption increased by 8%, in the southern zone by 12% and in the western zone by 4%.

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **Jan - July**  **2020** | **Jan - July 2021** | **Δ,  million kWh** | **Δ, %** |
| **I** | **Kazakhstan** | **61,280.5** | **65447.4** | **4166.9** | **7%** |
| 1 | Northern zone | **40,276.2** | **43298.7** | **3022.5** | **8%** |
| 2 | Western zone | **8008.2** | **8330.5** | **322.3** | **4%** |
| 3 | Southern zone | **12,996.1** | **14510** | **1513.9** | **12%** |
|  | ***including by regions*** |  |  |  |  |
| 1 | East Kazakhstan | 5405.1 | 5423.9 | 18.8 | 0.3% |
| 2 | Karaganda | 10,588.8 | 10989.7 | 400.9 | 4% |
| 3 | Akmola | 5,126.2 | 5832.4 | 706.2 | 14% |
| 4 | North Kazakhstan | 938.2 | 1005.4 | 67.2 | 7% |
| 5 | Kostanay | 2600.8 | 2786.6 | 185.8 | 7% |
| 6 | Pavlodar | 11,808.6 | 12617.4 | 808.8 | 7% |
| 7 | Atyrau | 3,725.7 | 3841.6 | 115.9 | 3% |
| 8 | Mangistau | 2977.2 | 3035.8 | 58.6 | 2% |
| 9 | Aktobe | 3,808.5 | 3951.4 | 142.9 | 4% |
| 10 | West Kazakhstan | 1305.3 | 1453.1 | 147.8 | eleven% |
| eleven | Almaty | 6338.7 | 3264.2 | 344.9 | 12% |
| 12 | Turkestan | 2919.3 | 3018.7 | 259.8 | 9% |
| 13 | Zhambyl | 2,758.9 | 1143.0 | 163.8 | 17% |
| 14 | Kyzylorda | 979.2 | 65447.4 | 4166.9 | 7% |

# **The results of the industry in January-July 2021**

*(express information of the Bureau of National Statistics ASPR RK)*

January-July 2021 compared to January-July 2020, the industrial production index (hereinafter referred to as IPP) amounted to 102.5%. An increase in production volumes was recorded in 14 regions of the republic, a decrease was observed in Atyrau, West Kazakhstan and Mangystau regions.

**Changes in industrial output by region**

*in % to the corresponding period of the previous year*

In the city of Almaty, due to an increase in the production of plastic bags, windows and doors made of plastic, building prefabricated metal structures, ready-mixed concrete, furniture, production of cars and trucks, buses, the IPP amounted to 122%.

In the Almaty region, the IPI was 114.8% due to an increase in the production of soft drinks, fruit and vegetable juices, beer, sugar, mortars, Portland cement and ready-mixed concrete.

In the city of Nur-Sultan, the IPP was 113.6%, mainly due to the growth in the production of soft drinks, ready-mixed concrete, refined gold, switchboards, prefabricated structures made of cement and concrete, and the production of railway and diesel locomotives.

In the Kostanay region, the IPP amounted to 110.2% due to an increase in the extraction of iron, gold and aluminum ores, copper and iron ore concentrates, iron ore pellets, the production of flour, gold in doré, tractors, combines and cars.

In the Akmola region, due to the increase in the extraction of gold-bearing ores, the production of pesticides, ready-made animal feed, pipes and hoses made of rubber, natural uranium, the production of combines, tractors and trucks, the IPP amounted to 108%.

In the Zhambyl region, due to the growth in the extraction of phosphate raw materials, the production of sugar, pharmaceuticals, pesticides, phosphate fertilizers, ferrosilicomanganese and diesel fuel, the IPP amounted to 107.7%.

In the North Kazakhstan region, due to the growth in the production of milk, flour, butter, cheese, chocolate, confectionery, plastic pipes, an increase in the production of freight cars, the IPP amounted to 107.2%.

In the Aktobe region, the IPP amounted to 106.8% due to an increase in the production of oil, copper and zinc concentrates, non-agglomerated iron ores, an increase in the production of chromium salts and chromium oxide.

In the city of Shymkent, due to an increase in the production of soft drinks, sunflower oil, medicines, Portland cement, fuel oil, motor oil, transformers, electrical wires and cables, the IPP amounted to 106.2%.

In the Pavlodar region, the IPP amounted to 105.7% due to the growth in the extraction of copper ores, the production of pesticides, gasoline, diesel fuel, propane and liquefied butane, fuel oil.

In the East Kazakhstan region, the IPP amounted to 104.7% due to an increase in the extraction of copper, gold-bearing and lead-zinc ores, gold-bearing concentrates, the production of finished animal feed, blister copper, trucks and tractors.

In the Turkestan region, due to the growth in the extraction of uranium and thorium ores, gold concentrates, the production of soft drinks, flour, sausages, electrical transformers, circuit breakers, electrical wires and cables, the IPP amounted to 101.9%.

In the Karaganda region, the growth of IPP amounted to 101.6% due to an increase in the production of gold concentrates, lead-zinc and gold-bearing ores, the production of medicines, pig iron, flat and galvanized rolled products, and the production of buses.

In the Kyzylorda region, the IPP amounted to 100.6% due to an increase in the extraction of uranium and thorium ores, the production of rice, sulfuric acid, Portland cement, building prefabricated concrete structures.

In West Kazakhstan IPP amounted to 93.7% due to a decrease in gas condensate production.

In Atyrau (93.1%) and Mangistau (95%) oblasts, the IPP declined mainly due to a reduction in crude oil production.

# *Electricity consumption by large consumers in Kazakhstan*

In January-July 2021, compared to the same period in 2020, electricity consumption by large consumers remained virtually unchanged (an increase of 1.26%).

*million kWh*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Consumer** | **January-July** | | |
| **2020** | **2021** | **Δ, %** |
| 1 | ArcelorMittal Temirtau JSC | 2146.1 | 2182.4 | 2% |
| 2 | JSC AFP (Aksu) "TNK Kazchrome" | 3,396.3 | 3,116.0 | -8% |
| 3 | Kazakhmys Smelting LLP | 697.3 | 658.4 | -6% |
| 4 | Kazzinc LLP | 1662.3 | 1607.2 | -3% |
| 5 | JSC "Sokolovsko-Sarbayskoye GPO" | 965.6 | 951.2 | -1% |
| 6 | Kazakhmys Corporation LLP | 750.5 | 752.7 | 0% |
| 7 | AZF JSC (Aktobe) "TNK Kazchrome" | 1,846.1 | 1,839.3 | 0% |
| 8 | RSE “Channel them. Satpaev" | 125.1 | 172.1 | 38% |
| 9 | Kazphosphate LLP | 1262.4 | 1,141.0 | -10% |
| 10 | NDFZ JSC (part of Kazphosphate LLP) | 1 104.0 | 963.7 | -13% |
| 11 | LLP "Taraz Metallurgical Plant" | 130.1 | 178.5 | 37% |
| 12 | JSC "Ust-Kamenogorsk titanium and magnesium plant" | 499.1 | 370.2 | -26% |
| 13 | Tengizchevroil LLP | 1,076.4 | 1,099.6 | 2% |
| 14 | PAZ JSC (Pavlodar Aluminum Smelter) | 558.1 | 553.4 | -1% |
| 15 | JSC "KEZ" (Kazakhstan electrolysis plant) | 2192.4 | 2200.7 | 0% |
| 16 | TemirzholEnergo LLP | 814.5 | 888.1 | 9% |
| 17 | JSC "KEGOC" | 2500.0 | 3,171.8 | 27% |
| **Total** | | **20622.2** | **20882.8** | **1.26%** |

*million kWh*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name** | **January-July** | | **Deviation, million kWh** | **Δ , %**  **2020** |
| **2020** | **2021** |
| **I** | **JSC "Samruk-Energy"** | **4119.63** | **4617.9** | **498.2** | **12.1%** |
| *1.* | *LLP "Bogatyr-Komir"* | 173.61 | 172.8 | ***-0.8*** | **-0.5%** |
| *2.* | *JSC "AlatauZharyk Kompaniyasy"* | 515.95 | 553.4 | ***37.4*** | **7.3%** |
| *3.* | *AlmatyEnergoSbyt LLP* | **4119.63** | **4617.9** | **498.2** | **12.1%** |

# **Coal**

# *Thermal coal mining in Kazakhstan*

According to the Bureau of National Statistics, Kazakhstan produced 60,449.8 thousand tons of hard coal in January-July 2021, which is 0.4% less than in the same period in 2020 (60,690.5 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **January-July** | | **Δ, %** |
| **2020** | **2021** |
| 1 | Pavlodar | 38038.5 | 37,151.10 | 98% |
| 2 | Karaganda | 18,865.80 | 18,763.30 | 99% |
| 3 | East Kazakhstan | 3,721.30 | 4225.60 | 114% |
|  | **Total for the Republic of Kazakhstan** | **60,690.50** | **60,449.8** | **99.6%** |

# *Coal mining ин Samruk-Energy JSC*

In January-July 2021, Bogatyr Komir LLP produced 25,763 thousand tons, which is 3.5% more than in the corresponding period of 2020 (24,899 thousand tons).

# *Sale of coal ин Samruk-Energy JSC*

In January-July 2021, 25,897 thousand tons were sold, including:

- to the domestic market of the Republic of Kazakhstan 20,687 thousand tons, which is 9.3% more than in the corresponding period of 2020 (18,921 thousand tons);

- for export (RF) - 5,209 thousand tons, which is 11.6% less than for the corresponding period of 2020 (5,894 thousand tons).

*thousand tons*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No. p / p** | **Region** | **Sales volume, thousand tons** | | **Δ, %**  **2021/2020** |
| **January-July 2020** | **January-July 2021** |
| **Total to the domestic market of the Republic of Kazakhstan** | | **18 921** | **20 687** | **109.3%** |
| **Total for export to Russia** | | **5 894** | **5 209** | **88.4%** | **1 144** | **46.8%** |

According to the indicators for January-July 2021, compared to the same period in 2020, the Company has an increase in coal sales by 4.4%.

# **Renewable energy sources**

According to the system operator, the volume of electricity production by renewable energy facilities (SPP, WPP, BGS, small HPPs) of the Republic of Kazakhstan in January-July 2021 amounted to 2,423.7 million kWh. Compared to the period January-July 2020 (1,784 million kWh), the increase was 2.9%.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **20 2 1g** | | **Deviation 20 2 0/2021,** | |
| **January-July** | **share in Kazakhstan, %** | **January-July** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | **Total output in Kazakhstan** | **61472.8** | **100.0%** | **66266.7** | **100%** | **4793.9** | **1.1%** |
| **I** | **Total RES in the Republic of Kazakhstan, incl. by zones** | **1784.0** | **2.9%** | **2423.7** | **3.7%** | **639.7** | **1.4%** |
| 1. | *Northern zone* | *617.6* | *34.6%* | *877.6* | *36.2%* | *260.0* | *1.4%* |
| 2. | *Southern zone* | *943.9* | *52.9%* | *1360.3* | *56.1%* | *416.4* | *1.4%* |
| 3. | *Western zone* | *222.5* | *12.5%* | *185.8* | *0.0%* | *-36.7* | *0.8%* |
| **II** | **Total RES in the Republic of Kazakhstan, incl. by type** | **1784.0** | **2.9%** | **2423.4** | **3.7%** | **639.7** | **1.4%** |
| 1. | *SES* | *802.2* | *45.0%* | *1022.9* | *42.2%* | *220.7* | *1.3%* |
| 2. | *WES* | *559.7* | *31.4%* | *936.7* | *38.7%* | *377.0* | *1.7%* |
| 3. | *Small HPPs* | *419.5* | *23.5%* | *460.0* | *19.0%* | *40.5* | *1.1%* |
| 4. | *BiogasInstallations* | *2.6* | *0.1%* | *3.8* | *0.2%* | *1.2* | *1.5%* |

January-July 2021 there is an increase in electricity production by small hydropower plants compared to the same period in 2020.

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Deviation 2020/2021,** | |
| **January-July** | **share in Kazakhstan, %** | **January-July** | **share in Kazakhstan, %** | **million kWh** | **%** |
|  | ***Electricity production in UES RK*** | **61 472.8** | **100%** | **66 266.7** | **100.0%** | **4 793.9** | **1.1%** |
| 1. | Production of "clean" electricity (RES + Large HPPs) | *5 307.9* | *8.6%* | *5812.6* | *8.8%* | *504.7* | *1.1%* |
| 2. | Production of "clean" electricity (RES excluding Large HPPs) | *1784.0* | *2.9%* | *2 423.7* | *3.7%* | *639.7* | *1.4%* |

Electricity generation by renewable energy facilities of Samruk-Energy JSC (SPP, WPP, small HPPs) in January-July 2021 amounted to 189.8 million kWh or 7.8% of the total volume of electricity generated by renewable energy facilities, which is 1 % lower compared to the same period in 2020 (in January-July 2020, the Company's renewable energy generation amounted to 191.5 million kWh, and 10.7%).

million kWh

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **2020** | | **2021** | | **Deviation 2020/2021,** | |
| **January-July** | **share in Kazakhstan, %** | **January-July** | **share in Kazakhstan, %** | **million kWh** | **%** |
| 1 | Production of “clean” electricity by Samruk-Energy JSC (RES excluding Large HPPs), including: | **191.5** | **10.7%** | **189.8** | **7.8%** | **-1.7** | **1.0%** |
|  | *JSC AlES Cascade of small HPPs* | *96.4* | *5.4%* | *97.1* | *4.0%* | *0.7* | *1.0%* |
|  | *Samruk-Green Energy LLP SPP 2 MW* | *2.4* | *0.1%* | *3.2* | *0.1%* | *0.8* | *1.3%* |
|  | *Samruk-Green Energy LLP WPP Shelek 5 MW* | *0.0* | *0.0%* | *8.6* | *0.0%* | *8.6* |  |
|  | *First Wind Power Plant LLP WPP 45 MW* | *92.7* | *5.2%* | *80.9* | *3.3%* | *-11.8* | *0.9%* |

# **Centralized electricity trading JSC "KOREM"**

*(Information of KOREM JSC for July is not available)*

# **Export-import of electrical energy**

In order to balance the production and consumption of electricity in January-July 2021, exports to the Russian Federation amounted to 790.6 million kWh, imports from the Russian Federation - 1,034.6 million kWh.

Including export of JSC " KEGOC " - 751.6 million kWh, import of electricity from the Russian Federation for the reporting period in the amount of 671.2 million kWh.

million kWh

| **Name** | **2020** | **2021** | **Δ 2021/2020** | |
| --- | --- | --- | --- | --- |
| **January-July** | | **million kWh** | **%** |
| **Export of Kazakhstan** | **-1,036.5** | **-1,854.0** | **-817.5** | **78.9%** |
| **in Russia** | **-576.7** | **-790.6** | **-213.9** | **37.1%** |
| **in the IPS of Central Asia** | **-459.8** | **-1,063.4** | ***-603.6*** | **131.3%** |
| **Import of Kazakhstan** | **844.1** | **1,034.6** | **190.5** | **22.6%** |
| **From Russia** | **643.4** | **837.3** | **193.9** | **30.1%** |
| **from IPS Central Asia** | **200.7** | **197.3** | **-3.4** | **-1.7%** |
| **Balance-flow "+" deficit, "-" excess** | **-192.4** | **-819.4** | **-627.0** | **325.9%** |

# **SECTION II**

# **Status of formation of the Common Electricity Market of the Eurasian Economic Union**

The common electricity market of the Eurasian Economic Union is planned to be formed by integrating the national electricity markets of **Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.** The EAEU Member States are gradually forming a common electric power market of the Union on the basis of parallel operating electric power systems, taking into account the priority provision of electric energy to domestic consumers of the Member States.

At the same time, the balance of economic interests of producers and consumers of electric energy, as well as other subjects of the EAEU OER, will be observed.

May 29, 2019 as part of the celebration of the fifth anniversary of the signing of the Treaty on the Eurasian Economic Union The Supreme Council signed an international agreement on the formation of a common electric power market of the Union in the form of a Protocol on amendments to the Treaty on the Eurasian Economic Union dated May 29, 2014 (in terms of the formation of a common electric power market of the Eurasian Economic Union).

On December 20, 2019, the Supreme Council adopted Decision No. 31 “On the plan of measures aimed at the formation of a common electricity market of the Eurasian Economic Union”, which establishes, among other things, the deadlines for the approval and entry into force of the rules for the functioning of the Union’s common electricity market, as well as other acts provided for by the specified protocol.

At present, the EAEU Member States are working on the development and harmonization of the rules for the functioning of the EAEU CER.

In 2021, two meetings of the Advisory Committee on the Electricity Industry under the EEC Board (hereinafter referred to as the Consultative Committee) were held   
(14th meeting on January 21, 15th meeting on April 21), two meetings of authorized representatives of the Member States (March 18 and July 30), 12 meetings of the Subcommittee on the Formation of the ERA of the EAEU of the Advisory Committee on the Electricity Industry under the EEC Board (hereinafter referred to as the Subcommittee) (56th meeting on January 14, 57th meeting on February 5, 58th meeting on February 25-26, 59th meeting on 11-12 March, 60th meeting March 26, 61st meeting April 9, 62nd meeting April 16, 63rd meeting May 13, 64th meeting June 7, 65th meeting June 24-25, 66th meeting meeting on 7 July, 67th meeting on 22-23 July) and one workshop (1 July).

Work on the formation of a common electricity market of the Eurasian Economic Union continues.

# **Status of formation of the Electricity market of the CIS**

Since 1992, 55 meetings of the Electric Power Council of the Commonwealth of Independent States (hereinafter - CIS EEC) have been held.

By decision of the EEC of the CIS (Minutes No. 50 dated October 21, 2016), the Consolidated Schedule for the Formation of a Common Electricity Market of the CIS Member States was approved.

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| **No.** | **Events** | **Period of execution** | **Current status** |
| 1 | Implementation of activities in accordance with Section II . Action Plan for Cooperation between the EEC and the EEC of the CIS, approved on June 10, 2016. | 2016-2020 | Permanent participation of the EEC representatives at the meetings of the EEC of the CIS, representatives of the EC of the EEC of the CIS - at the meetings on the formation of the EER of the EAEU is ensured. |
| 2 | Preparation of a draft procedure for the settlement of deviations from the agreed values of interstate power flows. | 2016-2017 | The decision to develop a procedure for settling deviations from the agreed values of interstate power flows was taken at the 45th meeting of the EEC of the CIS. The draft Procedure was considered at the 29th meeting of the Working Group "Formation of a common electric power market of the CIS countries" on September 15, 2016 in Moscow (RF). In accordance with the Decision of the 47th meeting of the EEC of the CIS, the Action Plan of the EEC of the CIS for 2016 includes the development and approval of draft documents on determining the magnitude of deviations from the agreed values of interstate electricity flows and the settlement of deviations from the agreed values of interstate electricity flows. Work continues. |
| 3 | Preparation of a draft procedure for the distribution of throughput capacity of interstate sections / export-import sections between participants in export-import activities. | 2018-2020 | By the decision of the 50th meeting of the EEC of the CIS, Methodological recommendations for the metrological support of measuring complexes for metering electric energy at interstate  power lines.  By the decision of the 50th meeting of the EEC of the CIS, the Schedule for monitoring the application of regulatory technical documents in the field of metrology of electrical measurements and electricity metering in the production activities of the energy systems of the CIS member states was approved. |
| 4 | Preparation of a draft procedure for compensation of costs associated with the implementation of the transit / transmission / movement of electricity through the energy systems of the CIS member states. | 2018-2020 | The unified format of the data exchange layout for accounting of interstate electricity flows, developed by the Working Group on metrological support of the electric power industry of the Commonwealth of Independent States, was approved by the decision of the 33rd meeting of the CIS EEC and recommended to the electric power industry management bodies of the CIS member states for use in organizing the accounting of interstate electricity flows and data exchange on interstate flows. |
| 5 | Harmonization of national legislation in the field of electric power industry, development and adoption of national regulatory legal documents necessary for the formation and functioning of the CIS EER. | 2020-2025 | The decision of the 51st meeting of the EEC of the CIS approved the Conceptual approaches to technical regulation and standardization in the field of electric power industry. The Regulations on the Working Group “Updating and Harmonizing the Regulatory and Technical Base for Regulating the Electricity Industry” were also approved. By the decision of the 51st meeting of the CIS EEC, the Work Plan of this Working Group was approved. |

# **Overview of the media in the CIS countries**

*(according to information from the website of the CIS EES Executive Committee and KOREM JSC)*

**REPUBLIC OF ARMENIA**

**The Ministry of Economy of Armenia discussed new projects with Russia in the area of SEZ and solar energy.** Prospects for deepening cooperation between Armenia and Russia in the trade, economic and industrial spheres were discussed at the Ministry of Economy of the Republic of Armenia.

During the discussion, they touched upon the activation of the working group, established in 2020 jointly by Armenia and the Sverdlovsk region of the Russian Federation, discussed the prospects for the participation of Russian companies in the SEZ in Armenia and the production of solar panels.

**A key stage of scheduled preventive maintenance (PPR-2021) has started at the Armenian NPP - work on restorative annealing of the NPP reactor vessel** .

It is noted that annealing will return the operational characteristics of the metal shell of the reactor to its original state by 80-85%. The implementation of this procedure will make it possible to operate the Armenian NPP until 2036.

The reactor vessel of the Armenian NPP will be heated to 475 degrees Celsius with the help of an annealing unit, held for 150 hours and allowed to cool slowly. The heat treatment of the reactor vessel metal will be carried out for a week.

The organization of work under the modernization contract is carried out by JSC Rusatom Service, which is part of the electric power division of the State Corporation Rosatom.

**Electricity generation in Armenia in January-June increased by 0.5% year-on-year** . The volume of electricity production, according to operational statistics, in January-June 2021 increased by 0.5% compared to the same period last year, the National Statistical Committee of the Republic reports.

As noted in the report, the volume of electricity production in January-June 2021 amounted to 3,822.0 million kWh. At the same time, this indicator in June 2021 decreased by 8% compared to June 2020, and by 8.2% compared to May 2021.

**By 2025, a solar photovoltaic station with a capacity of 200 megawatts will be built in Armenia.** By 2025, a solar photovoltaic station with a capacity of 200 megawatts will be built in Armenia. It will be located in the communities of Talin and Dashtadem of the Aragatsotn region of the republic. About $174 million will be invested for these purposes. The winner of the competition was the company "Masdar" from the UAE. 85% of the shares belong to this company, and 15% - to the State Interests Fund of Armenia. The program also has a social component. Thus, two communities are to be paid 320 million drams for their territorial development. Solar energy will be produced on their territories.

**Yerevan supplies Iran with electricity under the "gas for electricity" program, and the volumes vary depending on the time of year.**

Armenia will send as much energy as possible to Iran. Earlier, Iranian electricity industry spokesman Mojtab Rajabi Mashhadi said that [Tehran, amid ongoing power outages across the country, had decided to import it from Armenia](https://ru.armeniasputnik.am/world/20210707/28200817/Iran-importiruet-elektroenergiyu-iz-Armenii-eksport-iz-strany-priostanovlen.html) , Azerbaijan and Turkmenistan. The Ministry of Territorial Administration and Infrastructures instructed to send electricity to Iran in the largest possible volumes.

More electricity is sent in summer than in winter. [Armenia](https://ru.armeniasputnik.am/tags/keyword_news_armenia/) receives from Iran several hundred (usually 400-500) million cubic meters of gas per year, in exchange for which it supplies 3 kilowatt-hours of electricity per cubic meter. The gas is supplied to the Yerevan, and partially to the Hrazdan thermal power plant, where 4-4.5 kWh of electricity is produced from each cubic meter of gas. Thus, Armenia is left with a surplus of several hundred million kilowatt-hours.

**REPUBLIC OF BELARUS**

**A controlled shunt reactor has been installed at the Ross substation.** RUE "Grodnoenergo" has completed the implementation of the project "Installation of a controlled shunt reactor at the 330 kV Ross substation". Unique equipment - a controlled shunt reactor (CSR) of the RTDU 330/180000-U1 type with a voltage of 330 kV and a power of 180,000 kvar is used for the first time in the Grodno region. A controlled shunt reactor is a variable inductive reactance, continuously adjustable by biasing the ferromagnetic elements of the magnetic circuit. The magnetic system of one phase of the CSR contains two rods, on each of which there are control windings and network windings. When a regulated DC source is connected to the control windings (two thyristor-converting units are installed at the Ross substation), the bias flux increases, which in neighboring rods is directed in different directions and causes saturation of the CSR rods (magnetic circuit) in the corresponding voltage half-cycles. The saturation of the rods leads to an increase in the current in the network winding due to a decrease in the inductive resistance of the reactor. This ensures a change in the amount of reactive power consumed by the reactor in the range from 3% to 100% of the rated power of the CSR and a smooth change in voltage levels at the connection point. The CSR control system (manufactured by OAO Energia-T, Russia) makes it possible to load and unload the full power of the reactor in automatic and manual mode in less than 1 second. Monitoring and diagnostics system “Transformer equipment monitoring and control system” (SKU) is responsible for monitoring the state of CSR high-tech equipment, designed to collect, process, analyze, display and store diagnostic information characterizing the actual state of CSR.

**The highest windmill in the CIS was built in Belarus.** The highest wind power plant in the countries of the Commonwealth of Independent States was put into operation near the village of Asmolovichi, Mstislavsky district, Mogilev region. The wind turbine support has a height of 142 m, and the total height of the tower, taking into account the propeller blades, is 201 m, the blade span is 136 m. The capacity of the new installation is 3.4 MW. The electricity generated by the wind power plant is already supplied to the distribution grid of the Mstislavsky district. In one hour of operation, the windmill can supply electricity to 25 houses during the day. Its surplus is sent to consumers in the Krichevsky district.

**The capacity of renewable energy installations in Belarus has increased 19 times since 2010.** Last year, 1.243 billion kWh of electricity was generated from all sources of renewable energy. Compared to 2010, the capacity of renewable energy installations increased by 19 times, and by 8.9 times in terms of generation. Installations using renewable energy are registered with 278 legal entities and individual entrepreneurs. Belarus has created all conditions for the development of renewable energy sources. It started back in 2010 with the adoption of the law on renewable energy, and continues at an accelerated pace to the present.

**International experts assessed the readiness of Belarus to use renewable energy sources.** Today, the online launch of the International Renewable Energy Agency (IRENA) survey "Assessment of the readiness of Belarus for the use of renewable energy sources" took place. Belarus asked the agency to conduct this study. It was carried out in cooperation with the State Committee for Standardization, the Ministry of Natural Resources, the Ministry of Energy, the National Statistical Committee and other interested state bodies and public organizations. It presents key aspects of the current state of development of the energy sector. In addition, significant short- and medium-term measures have been proposed to improve legislative and departmental requirements in order to increase the use of renewable energy in the future, reduce Belarus's dependence on the supply of hydrocarbon fuel and energy resources from outside its borders.

**THE REPUBLIC OF KAZAKHSTAN**

**A preliminary feasibility study is being developed for the project to combine the electrical networks of the western zone with the Unified Electric Power System (UES) of the Republic of Kazakhstan.** The merger can be implemented by building a 500 kV line along three possible routes: from the city of Aktobe to the city of Atyrau; from the city of Zhezkazgan to the city of Atyrau; from the city of Shymkent to the village of Beineu, Mangistau region.

Also, to strengthen the electrical network of the western zone of the Unified Electric Power System of Kazakhstan (UES), a project was launched to build power grid facilities of the second chain of the existing 220 kV transit Uralskaya - Pravoberezhnaya - Inder - Atyrau - Kulsary - Tengiz.

**Over the past ten years, the cost of renewable energy in the world, especially solar energy, has fallen in price to the level of generation from traditional sources - coal or gas power plants. The global trend led to a reduction in tariffs for solar power plants in Kazakhstan from 2014 to 2020 by 58% at once.** The International Renewable Energy Agency (IRENA) analyzed the results of auctions for the construction of renewable energy sources over the past ten years and calculated how much alternative energy has fallen in price. From 2010 to 2020, the average global cost of electricity generated by solar power plants (SPP) decreased by 74% to $0.04 per kWh (about 18 tenge). According to the agency's calculations, this is 27% below the cheapest coal generation tariff.

Tariffs for onshore wind farms (WPPs) have fallen by 47% over the past decade, to $0.04. The data on tariffs for offshore WPPs in the IRENA report are incomplete, but they are expected to be in the range of $0.05–0.10 in Europe in 2023.

The lowest tariffs over the past 18 months were offered by new SPPs in Qatar ($0.0157), the UAE ($0.0135) and Saudi Arabia ($0.0104). The agency notes that a few years ago it was impossible to imagine that tariffs could fall below $0.02.

The cost of renewable energy has decreased so significantly due to improvements in technology and the value chain, as well as economies of scale, IRENA explains. As a result, last year the green share in the global increase in generating capacity was 62%. In the global energy system, renewable energy accounts for 36.6%; in 2020, their installed capacity reached 2,799 GW.

**In the East Kazakhstan region, it is planned to launch six green energy facilities for more than 7 billion tenge.**

New projects of renewable energy sources (RES) will be opened by the end of this year by Kazakh investors. Their total capacity will be 29.7 MW. According to the information provided, all six projects are being implemented in the Zharma district. The total investment is 7.4 billion tenge.

In particular, the launch of a wind power plant (WPP) for 2.25 billion tenge is expected before the end of the year. The capacity of this facility will be 4.95 MW. It is also planned to open a similar "green" project for 1 billion tenge near the village of Zhangiztobe.

The same amount of investment is invested in the construction of a wind farm by another Kazakh investor. The capacity of this facility will be 4.95 MW. Three more wind farms are being built for 1 billion tenge each. It is noted that due to the launch of these stations, 48 jobs will be created.

At the same time, in early July, a test launch was made at the Turgusun hydroelectric power station (HPP) with a capacity of 29.4 MW. The construction of HPP-1 was estimated at [11.5 billion tenge](https://lsm.kz/zelenye-proekty-v-vko) . Commissioning was scheduled for December 2019, and then expected in [2020](https://lsm.kz/eshe-odin-zelenuyu-stanciyu-obeshali-zapustit-v-kazahstane) .

[$370 million](https://lsm.kz/energetiki-vie-2021) this year . Meanwhile, according to the Ministry of Energy, 25 renewable energy projects with a total capacity of 583 MW were implemented in 2020. About $510 million was invested in them.

## **Kazakhstan will develop alternative energy sources**

**Prime Minister of the Republic of Kazakhstan Askar Mamin held a meeting with Claudio Descalzi, Chief Executive Officer of the energy company Eni.** Eni has been present in Kazakhstan since 1992 and has invested more than $15 billion in the economy of Kazakhstan.

*The parties discussed issues of increasing and maintaining the level of oil and condensate production at the Kashagan and Karachaganak fields, as well as the development of renewable energy projects in the Republic of Kazakhstan.*

The Prime Minister of Kazakhstan emphasized that Eni is an important investment partner of Kazakhstan, noting the company's contribution to the development of the Karachaganak and Kashagan fields, as well as exploration work at the Isatai and Abay fields.

*Eni makes a significant contribution to energy transition and decarbonization projects in the Republic of Kazakhstan. A number of joint projects are being implemented within this direction. Thus, in the Aktobe region, a project for the construction of a wind power plant with a capacity of 100 MW is being implemented, and in the Turkestan region, the construction of a solar power plant with a capacity of 50 MW is being completed.*

Memorandums on cooperation in the development of energy transition projects for the production and sale of electricity and on the development of agricultural and hydrogen projects in the Republic of Kazakhstan were signed between JSC NC KazMunayGas and Eni.

The Ministry of Ecology, Geology and Natural Resources, Kazgeology JSC and Eni signed a memorandum of cooperation on the joint implementation of subsoil use projects in the territory of the Republic of Kazakhstan.

**At the Ekibastuz GRES-1 named after Bolat Nurzhanov, within the framework of the project for the restoration of power unit No. 1 with a capacity of 500 MW, the dismantling has been completed by 100% and the installation of new technological equipment has begun. Commissioning of the renewable energy unit is scheduled for December 2023.**

Samruk-Energy JSC, which owns the plant, attaches great importance to this project. The successful implementation of this project, as well as the ongoing work at other energy facilities of the company, should reduce the existing electricity shortage in the industry and improve the country's energy security.

It is known that over the past four years, the average increase in electricity consumption in the country amounted to 4%, and the annual demand for electricity is growing by about 600 MW. Experts say available energy supplies are shrinking. The projected electricity balance shows that Kazakhstan will experience a shortage of production capacity from 2023, and there is already a shortage of regulatory capacity.

According to the system operator, in 2020-2021. In the autumn-winter period, the actual reserve of the operating capacity of the Unified Energy System of the Republic of Kazakhstan amounted to 600 MW. According to industry experts, while maintaining the current pace in the next heating season, the UES of the Republic of Kazakhstan may run out of power reserves, which will inevitably lead to a limitation in the supply of electricity.

The project "Reconstruction of power unit No. 1 with the installation of new electrostatic precipitators" will increase the plant's capacity to 4,000 MW and thus complete the long process of upgrading the main equipment of the GRES. Recall that in 2014 power units No. 2 with a capacity of 500 MW were connected to the grid, which significantly increased the production performance of Ekibastuz GRES-1. Earlier, in July 2012, power units No. 8 with a capacity of 500 MW were put into operation.

It should be noted that in addition to the reconstruction of the EGRES-1 power unit No. 1, Samruk-Energy JSC plans to implement the following projects to reduce the predicted electricity shortage:

* Commissioning of the third power unit of Ekibastuz GRES-2 with a capacity of 636 MW;
* Reconstruction of power units 3, 4, 5, 6, 7, 8 in order to increase the total capacity of Ekibastuz GRES-1 by 240 MW from 2028 to 2035;
* Reconstruction of the Almaty CHPP-3 under the AlPP with an increase in installed capacity up to 450 MW and provision of a shunting mode;
* Reconstruction of the Almaty CHPP-1 under the AlES, increase in capacity to 250 MW and creation of maneuverability by 2030;
* Commissioning of the Kerbulak HPP with a capacity of 40 MW, which will increase the capacity control range of the Kapchagay HPP to 300 MW in 2026;
* Development of projects for the development of wind and water potential in the Shelek corridor.

# **REPUBLIC OF KYRGYZSTAN**

**Without tariff changes in the electricity sector, the deficit could exceed 12 billion soms by 2025.** Without tariff increases, the situation with cost recovery will be aggravated.

The World Bank called the main driving factors for the deterioration of the situation :

- an increase in the amount of debt service, which is exacerbated by the recent depreciation of the foreign currency;

- inflation;

- low export earnings, dependent on long-term hydrological cycles and growth in domestic demand.

**Neighboring republics will supply 1.65 billion kWh of electricity to Kyrgyzstan under the agreements.** Kazakhstan will provide 900 million kWh of electricity, Uzbekistan - 750 million kWh. This is not an import or a purchase, but the provision of a resource based on the exchange of goods.

**The Ministry of Energy plans to introduce new tariffs for electricity from September 1.** The ministry expected to introduce the new tariffs on 1 August. “The new legal act will be registered with the Ministry of Justice. If the public discussion of the project ends on July 15, exactly one month is needed to submit it to the government for approval. Then, somewhere on August 15, a decision of the Cabinet of Ministers is expected.

[The new pricing policy](https://economist.kg/novosti/ekonomika/2021/06/16/naskolko-podorozhaet-elektroenergiya-polnyj-razbor-novoj-strategii-po-povysheniju-tarifov/) assumes a single tariff for the population of **1.09 soms** (an increase of 32 tyiyns). There will be no restrictions on electricity consumption for residents of high mountainous regions either in winter or in summer.

For the general population, it is proposed to leave a threshold of 1,000 kWh in winter due to low water. For other types of activities, the tariff is proposed to be increased to **5.04 soms** .

**The border villages of the Batken region will be provided with uninterrupted power supply.** Deputy Minister of Energy and Industry of the Kyrgyz Republic Taalaibek Ibraev and Chairman of the Board of the National Energy Holding Askhat Berdiev got acquainted with the progress of the project "Improving the power supply of the Arka massif of the Batken region".

As part of the implementation of this project, the construction of a new 110 kV substation "Razzakova" in the Batken region is underway. In addition to the construction of a new substation, the existing 110 kV Arka substation was reconstructed under the project and a new 110 kV overhead line 51 km long was built connecting these two substations. To date, the construction of the 110 kV substation "Razzakova" has been completed by 70-80%.

It should be noted that with the completion of the project “Improving the power supply of the Arka massif of the Batken region”, the villages bordering the Tajik Republic will be provided with uninterrupted power supply and will become independent of the power supply of the neighboring republic.

Also, in order to improve the production work of the electric grid areas of the Batken region and for the convenience of consumers, the Batken branch of Oshelectro OJSC was formed, which included the necessary administrative and management personnel, as well as Kyzyl-Kiya RES, Kadamjai RES, Leilek RES, Sulukta RES and Batken RES.

**Kyrgyz authorities change their mind about raising electricity tariffs in 2021**

Electricity [tariffs in](https://knews.kg/tag/tarify/) [2021](https://knews.kg/tag/2021/) will remain unchanged. The decision was made after a meeting with President Sadyr Japarov to discuss tariff policy, [Minister](https://knews.kg/tag/ministr/) of Energy and Industry Doskul Bermurzaev [told RFE/RL .](https://rus.azattyk.org/a/31357959.html)

The cost of electricity, according to him, will remain the same - 77 tyiyns per 1 kWh. If the limit of 700 kWh is exceeded, [the tariff](https://knews.kg/tag/tarif/) will be 2 soms 16 tyiyns.

The Ministry of Energy proposed to raise tariffs in stages. First, it is proposed to set a tariff for the population of 1 som 9.5 tyiyn, it will increase annually, and by 2023 it will be 1 som 48 tyiyn per kWh. From 2024, the tariff will be adjusted for inflation.

For the autumn-winter period, it was proposed to set a limit of 1000 kWh, payment in case of excess would be made at 2 soms 52 tyiyn.

# **THE REPUBLIC OF MOLDOVA**

### In Moldova, the production of electricity from renewable energy sources in 2020 amounted to 81.4 million kWh, an increase of 20.6% compared to 2019.

### Such data are contained in the report of the National Energy Regulatory Agency on activities in 2020. The document notes that of the total amount of electricity produced in 2020 from renewable sources, the largest share came from wind power (61.6%), behind it is followed by electricity from biogas (34.2%), solar electricity (4%), and the lowest share of energy produced by hydroelectric power plants (0.2%). At the same time, the production of solar electricity in 2020 amounted to 3 million 275 thousand kW / h, an increase of 2.3 times compared to the previous year. Wind power production in 2020 amounted to 50 million 138 thousand kWh, which is 35.8% more than a year earlier. The production of electricity generated from biogas decreased over the year by 3.3% - to 27 million 793 thousand kW / h. Electricity output by hydroelectric power plants decreased by 2.2 times - up to 147 thousand kWh.

According to available data, the total installed capacity of generating capacities in the electricity generation sector from renewable energy sources in 2020 amounted to 54.7 MW in Moldova, including 44.1 MW - wind, 4.3 MW - solar, 6.1 MW - on based on biogas, 0.2 MW - hydroelectric.

**Moldova in the first quarter of 2021, compared to the same period in 2020, reduced imports of energy resources and electricity in value terms by 5.7% - to $192.12 million. These are the country's balance of** payments data for the first 3 months. this year, published by the National Bank. According to the NBM, this evolution was mainly due to the reduction in the price of natural gas. In particular, in January-March 2021, compared to the same period in 2020, natural gas imports to Moldova in monetary terms decreased by 11.6% - from 79.05 million in the first quarter of 2020 to 69, 87 million in the first quarter of 2021. At the same time, over the same period, imports of diesel fuel increased by 3.1% - from $80.07 million to $82.57 million, and gasoline - increased by 15.8% - from $20, 09 million to $23.26 million. Coal imports decreased by 44.9% - from $2.16 million to $1.19 million, and electricity was not imported in January-March 2021, while in the same period last year it was imported for $8.11 million. And the import of energy resources under the "Other" section in the first quarter of 2021, compared to the same period in 2020, increased by 6.4% - from 14.32% - to $15, 23 million

### Moldavskaya GRES (Dnestrovsk) in the first half of 2021, compared to the same period in 2020, increased electricity production by 8.8% - up to 2 billion 289.8 kWh. At the same time, the station's installed capacity utilization factor (2520 MW) increased over the specified period from 19.13% to 20.92%. In the fuel balance of the station, the share of gas in January-June 2021 amounted to 99.98%, coal - 0%, fuel oil - 0.02% against 99.93%; 0.02% and 0.05%, respectively, over the same period a year earlier. As noted at the Moldavskaya GRES, the increase in electricity generation in the first half of 2021 was associated with an increase in its consumption by Pridnestrovian enterprises, in particular, the Moldavian Metallurgical Plant, as well as with an increase in the volume of electricity supplies to the right bank of the Dniester, which is regarded in Tiraspol as “ export to Moldova. As InfoMarket agency reported earlier, in 2020, in comparison with 2019, the Moldavskaya GRES increased electricity production by 10.5% - up to 4 billion 688.96 kW / h. Moldavskaya GRES is located in Transnistria on the western shore of the Kuchurgan Estuary. The installed capacity of the power plant is 2520 MW. CJSC Moldavskaya GRES is 100% owned by Inter RAO Group, a diversified energy holding operating in various segments of the electric power industry in Russia and abroad.

# **RUSSIAN FEDERATION**

# Russia has ratified the protocol on the common electricity market in the EAEU.Russian President Vladimir Putin signed the law on the ratification of the protocol to the Treaty on the Eurasian Economic Union dated May 29, 2014 in terms of the formation of a common electricity market of the EAEU.

The protocol, signed by the presidents of Russia, Armenia, Belarus, Kazakhstan and Kyrgyzstan, is aimed at improving the energy security of these countries, establishing the rules for the functioning of the EAEU common electricity market, and further strengthening their mutually beneficial and equal economic cooperation.

# Pilot projects of unified energy zones have been launched in Russia. The pilot project of a unified energy zone in the Kurgan and Tyumen regions, as well as in the Khanty-Mansiysk and Yamalo-Nenets Autonomous Okrugs, begins to operate on July 1, 2021. The energy zone involves the introduction of reference costs in the power grid complex, the purpose of which is to unify tariffs for the transmission of electricity in neighboring regions of Russia. Such a mechanism will reduce the tariff, in particular, in the Kurgan region by 34%.

According to the results of the "pilot", a single tariff space can be extended within the framework of federal districts, price zones of the wholesale market, or the entire country as a whole.

# The Baltic NPP is considering the possibility of supplying energy to Poland. The Directorate of the Baltic NPP has ordered technical support for the construction of a nuclear power plant in the Kaliningrad region, including the study of the possibilities of joining the energy system of continental Europe and, in particular, the transmission of electricity to Poland.

The construction of the Baltic NPP with two power units with a total capacity of 2300 MW began in 2012 in the Kaliningrad region with the prospect of supplying electricity not only to Russian but also to European consumers. However, the Baltic countries (Lithuania, Latvia, Estonia) in 2013 announced their intention to leave the unified energy system with the Russian Federation and reorient themselves to the EU market.

Earlier it was reported that the operator of all nuclear power plants in Russia, the Rosenergoatom concern, in 2015 concluded agreements with a number of European energy holdings on the sale of electricity from the future BaltNPP.

**The first hybrid solar power plant will be launched in the Krasnoyarsk Territory in September.** It will appear in the village of Tura, its capacity will be 2.5 MW. The ASPU construction project is being implemented within the framework of an energy service agreement between Hevel Energoservice LLC (part of the Hevel group of companies) and MP Ilimpiyskiye elektroseti. ASUE will work together with three existing diesel power plants in Tura. The volume of investments in the implementation of the project is more than 300 million rubles. It is planned that ASUE will save up to 644 tons of diesel fuel per year (12%).

**RusHydro will supply Sberbank with environmentally friendly electricity**

RusHydro and Mosenergosbyt entered into a free bilateral contract for the purchase and sale of environmentally friendly electricity. In accordance with the agreement, electricity generated at RusHydro's hydroelectric power plants will provide power to Sberbank's offices in St. Petersburg and Yekaterinburg.

RusHydro includes 100 renewable energy facilities: 68 HPPs and PSPs, three GeoPPs, 23 solar and six wind power plants. The Group is steadily increasing the installed capacity of renewable energy generation. Over the past five years, 1.1 GW of hydroelectric power plants, solar power plants and wind farms have been put into operation.

The operation of RusHydro's hydroelectric power plants in 2020 made it possible to avoid the emission of 63 million tons of CO2 equivalent into the atmosphere, emitted from the combustion of fossil fuels. Each million kilowatt-hours generated at hydropower plants prevents the emission of 665 tons of carbon dioxide, saves 353 tons of coal or 268 thousand cubic meters of gas. If the electricity generated by all hydroelectric power stations in Russia was replaced by the generation of thermal power plants, then greenhouse gas emissions in the electric power industry of our country would increase by 142 million tons, or 38%.

### The decree on the introduction of fees for unused power grid capacity may come into force as early as January 1, 2022. The Ministry of Energy of the Russian Federation has finalized a draft resolution on the introduction of fees for unused power grid capacity. The document may enter into force as early as January 1, 2022. In the new version, consumers are asked to pay for 15% of the total amount of the reserve at the rate for the maintenance of networks, although earlier it was about paying 60%.

The new mechanism will affect only those consumers that do not use more than 40% of the declared capacity. The volume of the reserve will be calculated as the difference between the maximum power and the maximum hourly consumption for the year. Similar requirements for consumers with their own generation and for wholesale thermal power plants.

# Solar energy storage systems are being tested in Bashkiria

The branch of the System Operator Bashkirskoe RDU (Republic of Bashkortostan), together with the Hevel Group of Companies, conducted the first stage of full-scale tests of the energy storage systems of the Burzyanskaya solar power plant (SPP).

The use of industrial energy storage systems (SEES) at solar power plants is a promising mechanism for integrating renewable energy facilities into the unified energy system (UES) of Russia. The tests have become the next step in the study of the potential for the use of industrial storage in the UES of Russia. This work began in 2020 at the Kosh-Agach SPP in the Altai Republic, where the first such tests were carried out.

The SNEE capacity of the Burzyanskaya power plant is 8 MWh, which allows for 80% redundancy of the capacity of this renewable energy generation facility, and today is a record for Russia.

The tests were carried out in order to study the permissible operating modes of storage devices and the possibility of their participation in regulating the operation of a solar power plant.

The experience gained in the course of full-scale tests of the SNEE of the Burzyansky SPPs will be taken into account when developing technical and functional requirements for electric power storage systems within the UES of Russia, as well as when creating a methodology for testing this equipment. Also, the test results will be used in the development of national standards governing the use of electricity storage systems in the UES of Russia.

# **THE REPUBLIC OF TAJIKISTAN**

**The implementation of the CASA-1000 project in Tajikistan is in full swing, - Ministry of Energy.** All necessary equipment has been delivered to the republic. Equipment for the converter substation will be delivered to Sangtuda. The Tajik part of the project will be implemented before the end of this year. In Afghanistan, the project is 65% complete. There, the project continues. In this neighboring country, no political movement opposes the CASA-1000 project. This project is beneficial to Afghanistan.

In other countries participating in the project, it (the project) is also being implemented without serious delays from the schedule.

The participating countries of the CASA-1000 project are Tajikistan, Kyrgyzstan, Afghanistan and Pakistan.

**The volume of electricity production in Tajikistan decreased by 170 million kW/h.** More than 10 billion kWh of electricity was produced in the first half of this year in Tajikistan. According to the results of six months of the current year, 10 billion 73.1 million kWh of electricity was produced in the republic.

In the same period last year, 170.1 million kWh more electricity was produced.

The reason for the decline in electricity production is a decrease in the inflow of water on the rivers, in the alignments of which hydroelectric power stations are located.

The volume of electricity exports for the reporting period amounted to 917.1 million kWh, which is 4.5 million kWh more than in 6 months of 2020.

**What is being built in Tajikistan?**

The CASA-1000 project provides for the construction of the following facilities in Tajikistan:

- Power transmission line 500 kV "Datka-Sughd 500" with a length of 477 kilometers, of which 28 km of the line falls on the territory of Tajikistan and the expansion of the substation "Sughd-500";

- Power transmission line 500 kV "Regar-Sangtuda" with a length of 115 kilometers and the expansion of the substation "Regar-500";

- converter substation in Sangtuda with a capacity of 1300 MW for converting alternating current into direct current and the construction of a substation "Nowshara" in Pakistan with a capacity of 1300 MW;

- construction of the Sangtuda-Novshara power transmission line in Pakistan with a length of more than 750 kilometers, of which 117 kilometers are in the territory of Tajikistan.

**Tajikistan plans to build solar and wind power plants with a total capacity of 700 MW in the coming years.** The main part of the energy capacity of the republic is hydroelectric power stations, however, given the low cost of wind and solar stations, it is possible to introduce them and receive electricity from alternative sources.